

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number	
		ILD0087154555	1	(800) 443-3718	000036525 MWI	
5. Generator's Name and Mailing Address		Generator's Site Address (if different than mailing address)				
FLINT HILLS RESOURCES 501 BRUNNER ST. PO BOX 61354 CHICAGO IL 60654		SAME				
Generator's Phone: (312) 224-1525						
6. Transporter 1 Company Name		U.S. EPA ID Number				
Clean Harbors Environmental Services, Inc.		MAD039322250				
7. Transporter 2 Company Name		U.S. EPA ID Number				
8. Designated Facility Name and Site Address		U.S. EPA ID Number				
Clean Harbors Environmental Services, Inc. 11800 South Stony Island Ave. Chicago IL 60617		ILD000608471				
Facility's Phone: (773) 646-4699						
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
		No.	Type			
X	1. RA, UN2055, WASTE STYRENE MONOMER, STABILIZED SOLUTION, 3, PG111	001	TT	3,000	G	D001 D018
	2.					
	3.					
	4.					
14. Special Handling Instructions and Additional Information						
1. CH5265813 ERG-H12X TRK-1331 TEL363						
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.						
Generator's/Offeror's Printed/Typed Name		Signature		Month Day Year		
GANESH KRISH		[Signature]		09 27 11		
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____						
17. Transporter Acknowledgment of Receipt of Materials						
Transporter 1 Printed/Typed Name		Signature		Month Day Year		
WILLIAM DUNCAN		[Signature]		9 27 11		
Transporter 2 Printed/Typed Name		Signature		Month Day Year		
18. Discrepancy						
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
18b. Alternate Facility (or Generator) Manifest Reference Number: _____ U.S. EPA ID Number _____						
Facility's Phone: _____						
18c. Signature of Alternate Facility (or Generator) Month Day Year						
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)						
1. H141 2. 3. 4.						
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a						
Printed/Typed Name		Signature		Month Day Year		
[Signature]		[Signature]		10 09 11		

US EPA Number: I L D087154555  
IEPA Number: 0990850005  
Company name: Flint Hills Resources Chemical  
Address: 501 Brunner Street, Peru, IL 61354

ILLINOIS Environmental Protection Agency  
2011 Hazardous Waste Report  
Form GM – Generation and Management

Instructions for this form found on pages 16-21. (Same UOM and density must be used for all quantities on this page).

**SECTION 1. WASTE DESCRIPTION**

A. Waste Description: Waste Styrene Monomer (stabilized) in solution  
B. EPA Hazardous Waste Code D001 D018  
C. Source Code: G 32 When Source Code is G25, enter Management Method producing residuals: H  
D. Form code: W 119 E. Waste Minimization Code X

**SECTION 2. QUANTITY GENERATED [DENSITY MUST BE ENTERED FOR ALL WASTE STREAMS!]**

All generation that counts towards your generation totals must be included on a Form GM, regardless of where or how managed.

A. UOM: 3 Density 8 3 lb/gal {Density of water is 08.34, most wastes are between 6 and 15}

B. Quantity generated in current reporting year: 26,101 0

**SECTION 3. QUANTITY MANAGED ON-SITE:** Did this location manage some or all of this waste in RCRA or UIC regulated treatment, recycling, or disposal units at this location? DO NOT include RCRA exempt processes.

N Y = Yes (continue to system 1) N = No (skip to section 4.)

On-Site System 1: Management Method H Quantity managed on-site this year: 83

On-Site System 2: Management Method H Quantity managed on-site this year: 97

**SECTION 4. OFF- SITE SHIPMENT – Refer to page 29 for common errors on facilities & management methods.**

A. Was any of this waste shipped off site this reporting year? Y Y = Yes (Continue to Site 1) N = No

SITE 1. Name and address of off-site facility: Clean Harbors Services, Inc.  
11800 South Stony Island Avenue, Chicago, IL 60617

B. U.S. EPA ID No. of facility waste was shipped to: ILD000608471

C. Management method shipped to: H 141

D. Total quantity shipped in this reporting year: 26,101 0

SITE 2. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: 134

C. Management method shipped to: H 146

D. Total quantity shipped in this reporting year: 150

SITE 3. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: 160

C. Management method shipped to: H 172

D. Total quantity shipped in this reporting year: 176

SITE 4. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: 186

C. Management method shipped to: H 198

D. Total quantity shipped in this reporting year: 202

SITE 5. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: 212

C. Management method shipped to: H 224

D. Total quantity shipped in this reporting year: 228

COMMENTS: Y Enter Y (Yes) if you have comments regarding this page and attach extra sheet.

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UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number		
		ILD087154555	1	(800) 325-1221	000432374WAS		
5. Generator's Name and Mailing Address			Generator's Site Address (if different than mailing address)				
501 BRUNNER STREET PERU, IL 61354 (815) 224-1525			501 BRUNNER STREET PERU, IL 61354 GEN: 2796				
Generator's Phone:			U.S. EPA ID Number				
6. Transporter 1 Company Name			IND058484114				
HERITAGE TRANSPORT, LLC - TECH LEMONT							
7. Transporter 2 Company Name			U.S. EPA ID Number				
8. Designated Facility Name and Site Address			U.S. EPA ID Number				
1250 SAINT GEORGE STREET EAST LIVERPOOL, OH 43920 (330) 385-7336			DHD980613541				
Facility's Phone:							
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
			No.	Type			
	X	1. RQ, UN2055, WASTE STYRENE MONOMER, STABILIZED, 3, PGIII, (D001), ER6#128P (33X55 DM)	33	DM	1815	G	D001
	X	2. UN2925, WASTE FLAMMABLE SOLIDS, 10X1C, ORGANIC, N.O.S., 4.1 (6.1), PGII, (STYRENE), ER6#134 (2X55 DM)	2	DM	140	P	D001
		3.					
		4.					
14. Special Handling Instructions and Additional Information							
1. 000_W17_0387103_LDR 2. 000_W27_0457228_LDR							
ER1:HERITAGE [1554059]							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true. 7/10/105							
Generator's/Officer's Printed/Typed Name			Signature			Month Day Year	
GANESH KRISHN						10 14 11	
TRANSPORTER	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____						
	17. Transporter Acknowledgment of Receipt of Materials						
	Transporter 1 Printed/Typed Name			Signature			Month Day Year
	Rozalia Munoz						10 14 11
	Transporter 2 Printed/Typed Name			Signature			Month Day Year
DESIGNATED FACILITY	18. Discrepancy						
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
	Manifest Reference Number:						
	18b. Alternate Facility (or Generator) U.S. EPA ID Number						
	Facility's Phone:						
	18c. Signature of Alternate Facility (or Generator)						Month Day Year
	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)						
	1. H040	2. H040	3.	4.			
	20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a						
	Printed/Typed Name			Signature			Month Day Year
	RBLACKBURN						10 31 11

US EPA Number: IL D087154555  
IEPA Number: 0990850005  
Company name: Flint Hills Resources Chemical  
Address: 501 Brunner Street, Peru, IL 61354

ILLINOIS Environmental Protection Agency  
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Form GM – Generation and Management

Instructions for this form found on pages 16-21. (Same UOM and density must be used for all quantities on this page).

SECTION 1. WASTE DESCRIPTION

A. Waste Description: Waste Styrene Monomer (stabilized) in solution

B. EPA Hazardous Waste Code: D001

C. Source Code: G 32 When Source Code is G25, enter Management Method producing residuals: H

D. Form code: W 119 E. Waste Minimization Code: X

SECTION 2. QUANTITY GENERATED [DENSITY MUST BE ENTERED FOR ALL WASTE STREAMS!]

All generation that counts towards your generation totals must be included on a Form GM, regardless of where or how managed.

A. UOM: 3 Density: 8.5 lb/gal (Density of water is 08.34, most wastes are between 6 and 15)

B. Quantity generated in current reporting year: 26,101.0

SECTION 3. QUANTITY MANAGED ON-SITE: Did this location manage some or all of this waste in RCRA or UIC regulated treatment, recycling, or disposal units at this location? DO NOT include RCRA exempt processes.

N Y = Yes (continue to system 1) N = No (skip to section 4.)

On-Site System 1: Management Method: H Quantity managed on-site this year: 0

On-Site System 2: Management Method: H Quantity managed on-site this year: 0

SECTION 4. OFF-SITE SHIPMENT – Refer to page 29 for common errors on facilities & management methods.

A. Was any of this waste shipped off site this reporting year? Y Y = Yes (Continue to Site 1) N = No

SITE 1. Name and address of off-site facility: Clean Harbors Services, Inc.  
11800 South Stony Island Avenue, Chicago, IL 60617

B. U.S. EPA ID No. of facility waste was shipped to: ILD000608471

C. Management method shipped to: H 141

D. Total quantity shipped in this reporting year: 26,101.0

SITE 2. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: 134

C. Management method shipped to: H 146

D. Total quantity shipped in this reporting year: 130

SITE 3. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: 160

C. Management method shipped to: H 172

D. Total quantity shipped in this reporting year: 176

SITE 4. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: 186

C. Management method shipped to: H 198

D. Total quantity shipped in this reporting year: 202

SITE 5. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: 212

C. Management method shipped to: H 224

D. Total quantity shipped in this reporting year: 228

COMMENTS: Y Enter Y (Yes) if you have comments regarding this page and attach extra sheet.

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US EPA Number: IL D087154555  
IEPA Number: 0990850005  
Company name: Flint Hills Resources Chemical  
Address: 501 Brunner Street, Peru, IL 61354

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Form GM – Generation and Management

Instructions for this form found on pages 16-21. (Same UOM and density must be used for all quantities on this page).

SECTION 1. WASTE DESCRIPTION

A. Waste Description: Waste Styrene Monomer

B. EPA Hazardous Waste Code: D001

C. Source Code: G 11 When Source Code is G25, enter Management Method producing residuals: H 54

D. Form code: W 210 E. Waste Minimization Code X

SECTION 2. QUANTITY GENERATED [DENSITY MUST BE ENTERED FOR ALL WASTE STREAMS!]

All generation that counts towards your generation totals must be included on a Form GM, regardless of where or how managed.

A. UOM: 3 Density 7 58 lb/gal (Density of water is 08.34, most wastes are between 6 and 15)

B. Quantity generated in current reporting year: 16,713 0

SECTION 3. QUANTITY MANAGED ON-SITE: Did this location manage some or all of this waste in RCRA or UIC regulated treatment, recycling, or disposal units at this location? DO NOT include RCRA exempt processes.

N Y = Yes (continue to system 1) N = No (skip to section 4.)

On-Site System 1: Management Method H Quantity managed on-site this year: 83

On-Site System 2: Management Method H Quantity managed on-site this year: 99

SECTION 4. OFF-SITE SHIPMENT – Refer to page 29 for common errors on facilities & management methods.

A. Was any of this waste shipped off site this reporting year? Y Y = Yes (Continue to Site 1) N = No

SITE 1. Name and address of off-site facility: Heritage WTI, Inc.  
1250 Saint George Street, East Liverpool, OH 43920

B. U.S. EPA ID No. of facility waste was shipped to: OHD980613541

C. Management method shipped to: H 40

D. Total quantity shipped in this reporting year: 16,713 0

SITE 2. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: 134

C. Management method shipped to: H

D. Total quantity shipped in this reporting year: 130

SITE 3. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: 160

C. Management method shipped to: H

D. Total quantity shipped in this reporting year: 176

SITE 4. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: 186

C. Management method shipped to: H

D. Total quantity shipped in this reporting year: 207

SITE 5. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: 212

C. Management method shipped to: H

D. Total quantity shipped in this reporting year: 226

COMMENTS: N Enter Y (Yes) if you have comments regarding this page and attach extra sheet.

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## Root Cause Failure Analysis – RCFA 1045- Tank Farm M1 Filter Gasket Failure

PURPOSE: Determine the cause of the filter housing lid gasket failure on the tank farm monomer recirculation system.  
DATE OF RCFA: 10/10/11

PROBLEM DEFINITION - Gasket failure on the monomer recirculation filter resulted in approximately 50 gallons spraying onto the pump pad inside the tank farm containment area.

WHAT: Monomer spill incident

WHEN: 9/27/11

WHERE: I-F-1150 , Tank Farm Monomer recirculation filter

CLASSIFICATION: Moderate environmental Incident

Safety:

Environmental: Non reportable

Revenue Loss: 50 Gal styrene (375 lbs) @ .684 / lb = \$257.00

Out of pocket cost: \$9550.00 Safe Harbor disposal & Eagle Clean up cost - \$750 FHR Hazmat labor

Frequency:

Description: Utilities Operator went to Tank Farm at approx 07:15 to obtain permit readings for Hot Work & Confined Space work that was scheduled to take place in the Tank Farm. When he entered the Tank Farm from the south-east ramp he noticed an odor of styrene. Continued his route taking readings and approached the M-1 Pump Pad and noticed styrene spraying from 1200 Circulating Filter Vessel. >>Leak observed (via Guardhouse camera) at 06:59 >>Utilities Operator found leak when taking permit readings with meter at 07:18

Immediate Corrective Action: Pump shutdown and valves closed off and leak stops at 07:20 (((Approx 50 gallons of styrene leaked from filter unit.))) Utilities Operator notified Production Facilitator of situation. Operator & Facilitator shutdown Circulating Pump 1200 and associated valves. Secured Area / Entrances. Notified Health & Safety for support in clean up and monitoring. Notified Environmental of spill. Eagle Services was on sight for another project - used them for clean-up of M-1 on Tank Farm floor.

**ROOT CAUSE:** Gasket & filter system design not compatible to application requirements. Most likely, due to a previous failure of the OEM gasket, a non-spec gasket was placed into service with no documentation.

RCFA SUMMARY: Following filter replacement on 9/22/11, the OEM recommended gasket for the filter, Crib stock # [015150](#) was installed on the filter. On 9/27/11, five days following the installation of the OEM gasket, the gasket failed.

<b>CORRECTIVE ACTIONS</b>	<b>RESPONSIBLE PERSON</b>	<b>DUE</b>	<b>DONE</b>
1. Forward environmental & clean up costs related to this incident to the RCFA Coordinator	Thurman / Krish	<b>10/15/10</b>	<b>10/10/11</b>
2. Obtain Gasket pressure rating & torque spec from manufacturer.	Stoneking	<b>10/31/11</b>	<b>10/28/11</b>
3. Create temporary MOC for non spec gaskets that were found in service and then (same type) put back into service following the failure of the OEM / Crib stock gasket.	Stoneking	<b>10/31/11</b>	<b>10/28/11</b>
4. Specify and install the proper relief valve for the filtration vessel.	Stoneking	<b>4/30/2012</b>	
5. Source & install a replacement filtration system specific to the application that is compliant to the <a href="#">150 AAS/150 AP PN01CS1S01</a> styrene piping spec.	Stoneking	<b>10/31/2012</b>	

#### **ATTENDEES**

FACILITATOR:	Mark Stoneking	Maintenance Planner
ATTENDEES:	Jeff Moran	Reliability Center Manager
	Doug Thurman	Production Facilitator
	Ganesh Krish	Environmental Manager
	Jon Duff	Maintenance Mechanic